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A STRATEGIC IMPERATIVE FOR THE 90S: EXPANDING BILATERAL ENGINEER ASSISTANCE

BY

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AN INDIVIDUAL STUDY PROJECT

by

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ABSTRACT

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Major changes have occurred in the threats and challenges the United States must contend with in the years ahead. The "Cold War" has ended and a new world order is emerging. At the same time the global environment is being severely degraded, economic problems abound, and proliferation of weapons to third world countries is becoming the primary threat to world peace. These strategic circumstances and domestic fiscal constraints dictate that we re-examine our national security strategy. One strategic initiative that would greatly help to address the emerging threats and challenges, and strengthen America's economy and security, is a substantial increase in bilateral engineer assistance. This initiative would also help to build new democracies and foster the new world order. The Department of State needs to take the lead on this initiative and the U.S. Army Corps of Engineers should be designated as the primary engineer agent. This paper examines recent changes in the world situation and why bilateral engineer assistance should be increased, provides recommendations regarding the conduct of this initiative, and addresses why the U.S. Army Corps of Engineers should be the primary engineer agent.

INTRODUCTION

Recent dramatic changes in the military threat and emerging global environmental and economic problems have extensively altered the nature of the challenges that the United States must contend with in the years ahead. At the same time we see the potential for a new world order, one where nations work together to resolve global problems and maintain peace. These changing strategic circumstances and domestic fiscal constraints dictate that we re-examine our national security strategy.

One strategic initiative that is right for the times is a substantial increase in bilateral engineer assistance. That is, engineer assistance conducted directly between the United States and a host country versus indirectly through contributions to a multilateral organization. It is only through direct involvement that the United States can influence the direction of the engineer assistance being provided and gain many of the advantages addressed in this paper.

Increasing bilateral engineer assistance would greatly help to address emerging global problems, promote democracy, and build a more stable and secure world. It would also serve to improve the economy and security of the United States, and safeguard our future environmental condition.

The Department of State and its diplomatic missions must lead the effort to increase bilateral engineer assistance, but execution of the program will require closely integrated support from many U.S. agencies and departments--a strong national engineer assistance partnership is needed. To maximize the effectiveness of this initiative one organization needs to be designated as the primary engineer agent for the partnership. The U.S. Army Corps of Engineers is uniquely qualified to perform this mission because of its structure, experience, and capabilities.

Developing a comprehensive and effective bilateral engineer assistance program will not be an easy task. There are many hurdles to overcome and factors to take into consideration. Nevertheless, we should seize the opportunity to send a strong signal that a new world order has indeed arrived, and we are shifting our focus from one of containment to one of peaceful coexistence and sustainable development. This paper examines recent changes in the world situation and why bilateral engineer assistance should be increased, provides recommendations regarding the conduct of this initiative, and addresses why the U.S. Army Corps of Engineers should be the primary engineer agent.

NEW WORLD ORDER

Largely due to the success of the West's strategy of containment, the Soviet Union was driven to recently establish its policies of glasnost (openness) and perestroika (economic restructuring). These policies were designed to make the Soviet Union economically and technologically competitive in the decades ahead. However, they also resulted in many remarkable changes that have substantially altered the security challenges of the United States.

Examples of these changes include the dismantling of the Berlin Wall, reunification of Germany, collapse of communism and steps toward democratization in most Eastern European countries, development of a comprehensive treaty to limit non-nuclear weapons in Europe, withdrawal of Soviet support/control of many client states, and dissolution of the Warsaw Treaty Organization. Although the Soviet Union remains a substantial military threat, because it retains formidable military power and is the only nation capable of unilaterally inflicting vast nuclear destruction on the United States, the above events have signaled the end of the "cold war" and greatly reduced the risk of a direct superpower confrontation. ¹ As stated by Senator Nunn, "the threat of a large-scale Warsaw Pact attack against Western Europe has virtually been eliminated and the chances of any Soviet go-it-alone attack are very remote." ²

At the same time we see a much greater effort by international organizations (such as the United Nations, Arab League, and Organization of American States) and individual nations to work to resolve disputes between belligerent countries and ensure that violators of international norms are made to answer for their transgressions--peacekeeping and peacemaking. Good examples are the negotiations between the United States and Soviet Union that have contributed to Namibia's forthcoming independence and the withdrawal of Cuban forces from Angola. These events mark the first time in the post-World War II period that United States and Soviet officials have worked together in an open and nonantagonistic manner to resolve a bitter political-military conflict. 3

An even more dramatic example is the unprecedented unity of effort exhibited by the world community to resolve the Iraq/Kuwait crisis in a manner that would not reward Saddam Husayn for taking over his smaller neighbor by force. Even the Soviet Union and Syria, long time opponents of the United States, supported the United Nations Security Council resolutions calling for the immediate, complete, and unconditional Iraqi withdrawal from Kuwait. In the past the international political environment has prevented realization of the collective security efforts envisioned in the U.N. charter.

In addition to the end of the Cold War and recent efforts by the international community to work together to resolve regional

problems, we have seen a growing movement toward democracy and increasing realization among world leaders that conflict doesn't accomplish much. ⁴ All of these events have brought us to the brink of a new world order, one where nations work together to resolve global problems and maintain peace. Or as put by President Bush: "a new world order....a new era - freer from the threat of terror, stronger in the pursuit of justice and more secure in the quest for peace..." ⁵

Although events indicate a new world order is emerging in the wake of the demise of the Cold War, forces are already at work that are presenting new challenges to global stability and peace. These forces are the environmental crisis, global economic problems, and increasing military capabilities of the developing world.

ENVIRONMENTAL CRISIS

Just as we find ourselves on the verge of a new world order the international community has come to the realization that a new global threat has emerged which has little regard for military might or international borders--environmental degradation. Recognition is also dawning that environmental degradation is an international problem that will require sacrifices on the part of both developed and developing nations. ⁶

The magnitude and seriousness of global environmental problems have been addressed in many publications and fora. In broad terms, major examples of these problems are: more than 1.75 billion people live without safe drinking water and each year more than 10 million deaths result from water-borne diseases; each year 15 million acres of productive land turns into worthless desert and 27 million acres of rain forest are destroyed; since the industrial revolution began, atmospheric carbon dioxide levels have increased by 25 percent leading to global warming; and millions of tons of hazardous waste are generated and improperly disposed of each year. 7

All environmental problems are greatly exacerbated by the world's rapidly expanding population. The number of people on the earth is growing by over 78 million each year. It is projected that the world population will go from the current level of 5.3 billion to 6 billion before the year 2000 and to 10.5 billion by the end of the 21st century. To make matters even worse, the majority of this growth is in developing nations.

More specific examples of the growing environmental crisis can be seen in Eastern Europe which has been cited as one of the world's greatest polluters. Bulgaria's drinking water is contaminated by nitrates. In Hungary the Danube River runs black with industrial and municipal wastes. Eastern Germany holds the unenviable record of generating the highest annual per capita level of carbon dioxide emissions in the world, and about 30

percent of their waters have been killed due to industrial waste and agricultural pesticides. The rivers and lakes in Eastern Europe are so bad that life expectancy for people living in the region is reduced by one-third. Furthermore, as a result of pollution problems, one in five Polish children is born with either physical or mental deformities.⁸ The Soviet Union, meanwhile, has indicated that 68 of its cities are essentially environmental disaster zones, most surface water in the country, is heavily polluted, and many toxic waste sites exist.⁹

Eastern Europe is not alone. During the 1980s environmental conditions in many African, Latin American, Caribbean, and Asian countries have substantially deteriorated. Environmental problems in most developing nations are inextricably linked with economic problems. They are too poor to pay for actions needed to resolve environmental problems. The people have little choice other than to continue to degrade the environment in order to survive. Two of the most critical problems in these countries are the shortage of clean water and the depletion of renewable natural resources such as wood.

Global environmental problems are becoming so severe that they could be the precipitator of future wars. As indicated in the Brundtland Commission Report, prepared for the United Nations, "ecosystems do not respect national boundaries--water

and air pollution move through borders; nuclear accidents can threaten entire regions." 10

The Deputy Assistant Secretary of Defense (Environment) recently indicated that world leaders have come to realize that even if they render their own environments clean, no amount of wealth or military strength can protect their nations from the side effects of environmental abuses elsewhere. He also reported that in a recent survey Americans ranked global environmental problems first among top priority threats to the United States. 11 Furthermore, in a 20 February 1990 report to the Social Science Research Council, the possible effects of environmental change on security were summarized as follows:

Environmental change may shift the balance of power between nations either regionally or globally, producing instabilities that could lead to war. Or, as global environmental damage becomes more obvious, nations of North and South may quarrel over who is responsible for the damage and who should pay for mitigating it. And poor nations may fight over dwindling and uncertain supplies of water, agriculturally productive land, and fish. In general, environmental change will probably "ratchet up" the level of stress in the international system, increasing the likelihood of conflict and impeding search for cooperative solutions. 12

A prime example of a problem that could lead to a major conflict in the years ahead is where one country is degrading the quantity and quality of water that flows to another. The potential for this kind of problem is great because 30-40 percent of the global population lives in an international river basin, with 23 of these basins being supplied by water that is shared by

four to twelve countries. ¹³ Countries such as Egypt and Israel have already threatened to take military action if water supplies originating in other countries are disrupted or degraded. Another example is acid rain, which has little regard for international borders and can have a devastating affect on the environment. Such border-breaching environmental "Invaders" are forcing all nations to broaden the concept of national security, and shift their attention to the new dangers jeopardizing future global well-being. ¹⁴

Environmental trends forebode a future with great challenges for humanity and world order. As summarized at a U.N. environmental conference in 1989, "many countries would be devastated if only a half of most predictions regarding the environment were to come true in the next 50 years." ¹⁵ The environmental crisis will clearly be a very powerful force for the emerging international order to contend with; consequently, it must be considered as a major national security issue.

GLOBAL ECONOMIC PROBLEMS

Rapidly growing economic problems will also adversely affect the stability of the new world order. As stated by General Colin Powell, "the dangers in this world seem to spring more from its enormous debt problems and the poverty and joblessness that those problems generate, than from irreconcilable East-West tensions." ¹⁶

One of biggest economic problems is the ever widening prosperity gap between the North and the South. While the standard of living in many countries in the North has vastly improved in the past 40 years, millions in Africa, Latin America, the Caribbean, and parts of Asia remain in misery. For many developing countries, the 1980s have been viewed as a decade lost for development. ¹⁷ For example, although we have seen a 58 percent increase in democratic governments in Latin America during the past ten years, many of the people in these countries look to their capitals with disillusionment. They have been suffering under a ten-year cycle of recession and inflation, and decreased living standards. ¹⁸ Over 1 billion people in developing countries, at least 20 percent of the world's population, live below the poverty level (living on less than \$370 a year). ¹⁹

As summarized in a Spring 1990 article in New Perspectives Quarterly:

In restless despair, the hopeless masses of the periphery [people in the South that are not part of the elite] will witness the spectacle of the wealth of others. With no future of their own in an age of air travel and telecommunications, the terminally impoverished will look for one in the North: they threaten to become nomads of a different kind, a new version of the desert nomad, migrating from place to place, looking for a few drops of what we have in Berlin, Paris or Los Angeles, which for them are oases of hope. This dynamic threatens true world war of a new type, of terrorism that can suddenly rip the vulnerable fabric of complex systems. ²⁰

Economic and environmental issues are inseparable. When the compulsions for development and survival are combined with the restrictions posed by poverty many individuals exploit their natural resources beyond endurance. As stated by Prime Minister Mugabe of Zimbabwe, "the poor have no choice, they cannot exercise the option to die today so as to live well tomorrow." 21

The linkage between the economy and environment was underscored at the April 1990, White House conference on science and economics research related to global change. President Bush opened the conference with this statement:

As we move forward, all of us must make certain we preserve our environmental well-being and our economic welfare. We know that these are not separate concerns. They are two sides of the same coin...It's in the interest of the developed world, and the developing world alike...In a climate of poverty or persistent economic struggle, protecting the environment becomes a far more difficult challenge...Development doesn't mean just another point in the gross national product; it's measured in human lives, an end to hunger, lower infant mortality, longer life expectancy. Not just quality of life, but life itself. 22

Economic problems are further complicated by the tendency toward globalization of the world economy. During the past 20 years, for example, the prosperity of the United States has become increasingly intertwined with that of the developing countries. These countries are important markets for United States exports and investments. They also contribute to our economy by supplying critical raw materials and products. 23

Although economic problems are most severe in the developing world, many developed nations are also having major economic difficulties. The Soviet Union, for example, has lost its super power status largely due to the collapse of its economy. This development demonstrates the far reaching impact economic changes can have on the social and political situation in a country. Even the United States is having economic problems. Once the world's largest creditor nation, it is now the world's largest debtor. We earned this title by having a national debt of nearly \$3 trillion, to include a foreign indebtedness that is fast approaching \$1 trillion. The United States also appears to be lagging in the intense economic competition that is occurring between the advanced industrialized nations.

In today's interdependent world economy every nation has a stake in the economic problems of its neighbors due to the reciprocal economic turmoil, environmental degradation, and military conflicts that might ensue. Economic problems and power are becoming as important to the security equation as military power. 24

INCREASING MILITARY CAPABILITIES OF THE DEVELOPING WORLD

The stresses and threat of conflict posed by emerging environmental and economic problems are greatly exacerbated by the proliferation of weapons and increasing military capabilities

of the developing world. A growing number of developing countries are acquiring vast arsenals of tanks, artillery, ballistic missiles, tactical aircraft, and biological and chemical weapons that go far beyond their defensive requirements. Furthermore, several of these same countries are trying to acquire and/or develop nuclear weapons.

The growing and increasingly sophisticated military capabilities of many developing countries make it more likely than ever that they will lash out at their neighbors due to some long harbored grievances or inability to cope with severe environmental or economic problems. Iraq's attack on Kuwait clearly demonstrated the validity of this concern. Secretary Cheney, in his annual report to the President and Congress, highlighted proliferation of weapons as one of the primary challenges to U.S. national security. 25

RETHINKING NATIONAL SECURITY STRATEGY

Today there is a newly promising world that has largely shed its biggest threat, a direct United States/Soviet confrontation, but is becoming increasingly hobbled by a growing set of new challenges--environmental crisis, global economic problems, and increasing military capabilities of the developing world. When these new challenges are coupled with the revised Soviet threat and our domestic fiscal problems, it becomes essential that we completely re-examine United States national security strategy.

As stated by Senator Boren, Chairman of the Senate Select Committee on Intelligence, "the gravest threat to the future security of this country would be if we fail to adjust our thinking to all the changes in the world around us." 26

As a part of the strategy development process, in early 1990 President Bush defined the Nation's interests and objectives during this period of transition as shown below: 27

- o The survival of the United States as a free and independent Nation, with its fundamental values intact and its institutions and people secure.
- o A healthy and growing United States economy to ensure opportunity for individual prosperity and a resource base for national endeavors at home and abroad.
- o A stable and secure world, fostering political freedom, human rights, and democratic institutions.
- o Healthy, cooperative and politically vigorous relations with allies and friendly nations.

The task before us is to determine how we can best use our elements of national power (political, socio-psychological, economic, and military) to achieve these desired objectives within the strategic circumstances that have been outlined. Some analysts believe the overall strategy should be a shift toward greater isolationism. Many political scholars, however, recommend against isolationism. For example, the authors of American National Security concluded that: "A hesitant America, disengaging from its commitments and uncertain as to its role, will inspire disillusion among its allies and confidence on the

part of its adversaries. A strong, self-confident America will help create the conditions of its own security, and that of its allies and friends." 28

In fact, most analysts are indicating that the United States' overall strategy in the 1990s should be based on more versus less involvement in global affairs. A recent article in Foreign Policy indicates that American foreign policy should be centered on the spread of freedom. And the best way to spread freedom is to set an example to the world of the benefits of democracy. 29 Similarly, an article on post-cold war politics suggests that promotion of democracy should become the keystone of Americans' sense of purpose in the world. The article also cites the need to build cooperative international structures to address three interrelated global problems: economic development, nurturing of democracies, and environmental protection. 30 A recent study concluded that, "it is time to get serious again about exporting the ideas of democracy and freedom." 31 A last example is from an address by Secretary Baker in the latter part of 1990:

Beyond containment lies democracy. The time for sweeping away old dictators is passing fast; the time for building up the new democracies has arrived...As once our Founding Fathers drew upon confidence in the citizens to build a new democratic society, so now must our foreign policy build upon the same confidence to build a newly democratic international society. This is our opportunity and our challenge. 32

The end of the Cold War represents a great victory for the West--democracy over communism. The United States cannot capitalize on this victory by withdrawing from the international scene during this time of global challenges, growing interdependencies, and great promise. On the contrary, to meet President Bush's objectives, America must become increasingly involved in actively promoting a new world order and democracy. And America must foster stability by combating the environmental crisis, global economic problems, and increasing military capabilities of the developing world. Accordingly, a major element of our forthcoming national security strategy should be a substantial increase in bilateral engineer assistance, with particular emphasis on environmental concerns and sustainable development.

Bilateral engineer assistance means a comprehensive program in needy, friendly countries that includes: a detailed assessment of the host country's engineer management, environmental, infrastructural, engineering technology, and military engineer problems; followed by a phased campaign of selected training programs, pilot construction projects, and nonstructural corrective actions. Types of construction projects that might be completed include water supply and treatment, hazardous and toxic waste remediation, solid waste disposal, recycling, electric power generation, roads, and bridges.

The concept is not to try to build/rebuild an entire nation, but to help to put a country on the road to sustainable development through a systematic program of analysis, education, technology transfer, and corrective actions. The World Commission on Environment and Development defines sustainable development as, "development that meets the needs and aspirations of the present without compromising the ability of future generations to meet their own needs." 33

Engineer assistance is one of the most powerful tools available for helping to reduce two of the emerging causative factors for future political instability and conflicts--environmental crisis and global economic problems. Reducing these causative factors would in turn decrease the potential for conflict posed by the increasing military capabilities of the developing world. Although it is not extensively addressed in this paper, to further decrease this threat the United States should work to reduce global arms sales and develop additional arms control agreements.

The importance of engineer assistance to developing nations has been addressed in many fora. Some examples are provided below:

- o A 1988 report by the Regional Conflict Working Group submitted to the Commission on Integrated Long Term Strategy summarized the value of engineer assistance as follows:

...engineers, whether acting as advisers, trainers, or actual constructors, can render very significant nation assistance...Physical infrastructure--roads, bridges, water supplies, dams and levees for flood control, and the like--figure prominently in Third World conflict...Its absence becomes a source of popular discontent, a breeding ground for disaffection and violence...Engineer contributions to the second phase--developing self-sufficiency--center on technical assistance for nation building. ³⁴

o A book recently published by the Strategic Studies Institute of the U.S. Army War College underscores the great potential of military civic action to further our strategic goals and indicates "the time is right" to place greater emphasis in this area:

The military has played a major role in the emergence of new nations that transcends combat missions and shapes the culture of the society of which it is part. Indeed, the concept of "Military Civic Action" (MCA) is a formalized approach to what has gone on in an informal manner since the beginning of organized government. It is a process by which the military contributes to the social and economic development of a society..."Greek and Roman soldiers had built roads, colonial armies had established public works, and in the United States, the Army Corps of Engineers helped to settle the frontier and maintain transportation arteries...What is important is that in the process of aiding civilians in any Third World country, the host country military can increase popular support and credibility for itself, as well as for the established government, and at the same time contribute in a significant way to the development of that country. ³⁵

o Alan Woods, Administrator of the Agency for International Development (AID), made the following comments regarding future emphasis in the foreign assistance arena: "There is no one indelible blueprint for success. Political, cultural, and material environments vary. But growth-oriented policies are a

constant among success cases, regardless of the levels of aid they received..." 36 Engineer assistance is clearly a growth-oriented form of assistance. Lloyd Black stressed this in his book, The Strategy of Foreign Aid: "Many capital structures and facilities are a virtual prerequisite for internal development programs and attracting foreign, private investment. The lack or shortage of roads, ports, and power plants are well-known obstacles to economic development." 37 A July 1990 briefing by the Corps of Engineers presented a similar observation: "Our experience in the United States, backed by findings of recent national and Congressional commissions, is that public works development can be one of the major means to build democratic institutions and a market economy." 38

- o Congress often stresses the importance it places on engineer assistance. For example, during the a 1990 Senate hearing, the administration was chided for not living up to its pledge to make environmental protection a cornerstone of U.S. foreign assistance and not having a more aggressive program for providing clean and safe water. 39 Most environmental problems will require an engineered solution, even though the corrective actions may not entail construction activities.

- o The U.N. Brundtland Commission report indicates sustainable development is critical for combating environmental and economic problems. It calls for an increase in assistance

programs aimed at promoting sustainable development. 40

Similarly, this initiative is in keeping with a United Nations declaration that the most important challenges for the 1990s are revitalization of economic growth and social development in developing countries, and integration of environmental concerns into national policies. 41

Engineer activities provide a foundation for the building of successful societies. Let us consider where our own country would be if engineers did not construct water and waste treatment systems, roads and bridges, power generation facilities, etc. President Bush summarized the contributions of engineers to this Nation in a January 1991 letter paying tribute to the engineering community during National Engineers Week, February 17-23:

Although the frontiers of old are gone, the pioneering spirit of discovery and progress endures in the work of our Nation's engineers. Through a unique combination of art and science, engineers help to transform the limitless imagination of the mind into reality. Engineering touches every corner of our lives, making our world safer, healthier, more productive, and more enjoyable. 42

Substantially increasing bilateral engineer assistance will not serve as a panacea for resolving emerging global challenges. And we cannot completely forsake other forms of assistance, such as military hardware, health, and food support. Nor can we forget that we need to continue to have a strong military force. But emphasizing bilateral engineer assistance would greatly help us to achieve the following goals:

o Send a strong signal that a new world order has indeed arrived, and we are shifting our focus from one of containment to one of peaceful coexistence and sustainable development. Many recent writings, to include an October 1990 article in Europe, indicate that the United States no longer plays the main leadership role on the international scene. ⁴³ This initiative would demonstrate vision on the part of the United States and provide leadership in a world that is looking for new direction in the wake of the demise of the Cold War.

o Promote democratic institutions and market economies. This initiative would provide many examples of the benefits of democracy and a market economy.

o Strengthen confidence in the United States and increase our access to markets, resources, and areas critical to our economy and security. Effective, high-visibility assistance programs increase cooperation and foster goodwill toward the United States.

o Train host nation personnel (both civilian and military) to perform engineer management functions and civil works, handle environmental issues, and respond to natural and man-made disasters. In short, prepare the people of the host country to help themselves.

o Provide a vehicle for helping emerging nations to address existing environmental problems and in turn, safeguard our own

future environment. We must recognize that as developing nations work to alleviate poverty and achieve social and economic development their contributions to global environmental problems will grow. We cannot afford to stand idly by and let others repeat the environmental mistakes of the past, e.g., use ineffective wastewater treatment systems, improper procedures for handling toxic wastes, and antiquated, high polluting industrial techniques. 44

- o Complete construction projects that will help to improve the quality of life and economy of the assisted nations; thereby, promoting support for (helping to legitimize) the host nation government and reducing the gap between "haves" and "have nots". This initiative would help to erase grievances that could be exploited by either internal or external subversive elements. It is far better to eliminate the root causes of instability than to have to put down an insurgency once it has started.

- o Provide a vehicle for introducing United States firms and technology to a much wider world market, consequently, expanding our economy. Expanding engineer assistance can do for our engineer related industries what Defense Cooperation activities have done for our defense industries. Deputy Secretary Lawrence Eagleburger recently indicated that the Foreign Service establishment needs to become more actively engaged in trying to help American business abroad. 45 This initiative would provide them with a tool for doing more.

o Obtain training for United States military and civilian engineers. Engineer assistance projects provide very realistic and effective training for our engineer forces, and improve their ability to meet other mission requirements.

Increasing "bilateral" versus "multilateral" engineer assistance is being emphasized because it has a much greater potential to further the United States' interests, particularly in terms of strengthening our ties with foreign countries, spreading democracy, and bolstering our own economy. Engineer assistance managed by a multilateral organization does not afford the United States the same degree of visibility and influence even though we may have contributed a large portion of the funds being used. In addition, the United States has very limited control over the direction and quality of multilateral engineer assistance efforts.

Expanding bilateral engineer assistance would provide a vehicle for combating global environmental and economic problems, promoting and building up new democracies, and strengthening America. It would also provide a means for helping to build a new world order and providing leadership at a time of great uncertainty. Lastly, it would greatly contribute to a more stable and secure world as envisioned by our national objectives. Having looked at the potential benefits of expanding bilateral

engineer assistance, let's examine what is currently being done in this area.

CURRENT INTERNATIONAL ASSISTANCE PROGRAM

Although we already have in place most of the parts we need to establish a comprehensive bilateral engineer assistance program, the current level of effort falls far short of the envisioned initiative. From the standpoint of the proposed initiative there are two primary problems with the existent international assistance program:

- o Insufficient funds are provided to support a comprehensive bilateral engineer assistance program.

- o There is a lack of commitment to make bilateral engineer assistance a major element of our national security strategy.

First, let's look at the parts we do have. We already have most of the organizational structure in place for developing and executing a comprehensive bilateral engineer assistance program. The Department of State, which is responsible for ensuring the integration of all elements of international assistance as an effective instrument of United States foreign policy, has a vast network of diplomatic missions around the globe.

Within the diplomatic mission is a "country team" lead by the chief of mission (normally an Ambassador). The team is

comprised of key representatives from the various United States departments and agencies that are in-country, such as the Agency for International Development, Information Service, Military Security Assistance Organization (representatives of the applicable Unified Commander), and Departments of Treasury, Agriculture, and Commerce. The exact composition of the team varies from country to country based on the Ambassador, missions, objectives, and number of United States departments and agencies in residence. 46

A primary mission of the country team is to work with the host nation to develop a country plan. The country plans are considered when the United States develops its International Security Assistance and International Development and Humanitarian Assistance budgets. These two programs include a variety of assistance such as military equipment, material, and training, economic, engineer, agricultural, health, food, disaster relief, peacekeeping, education, narcotics control, and refugee support. United States "bilateral" engineer assistance, which would be increased under this initiative, is generally handled either through AID or the military civic action process. "Multilateral" engineer assistance is provided by contributing to multilateral development banks and international organizations. Thus, the current international assistance program provides some bilateral engineer assistance, and the framework for a more aggressive and comprehensive effort exists.

Unfortunately, however, sufficient funds are not available to support a comprehensive bilateral engineer assistance program and the situation is getting worse. There are several key parts to this problem:

- o Appropriations for foreign assistance have been on a steady decline since 1985. In constant 1991 dollars, foreign assistance has dropped from \$23 billion in 1985 to \$15 billion in 1991, a decline of 35 percent. Consequently, funds available for bilateral engineer assistance are declining.

- o Historically, only a very small portion of the foreign assistance funds are available to support bilateral engineer assistance. In 1990, for example, less than 15 percent of the funds could have been used for bilateral engineer assistance and a much smaller percentage actually went for that purpose. It is very hard to get an exact figure on how much of the foreign assistance budget ultimately goes toward bilateral engineer assistance since the funds in some accounts can be used in a variety of ways.

- o Earmarking by Congress has substantially degraded the flexibility of the foreign assistance program, frustrated the country plan concept, and further reduced funds available to support bilateral engineer assistance. A prime example is the fact that about 35 percent of the entire 1990 foreign assistance budget was earmarked to go to Egypt and Israel. In recent years

over 90 percent of the foreign assistance funds have been earmarked by Congress before they come back to the Administration.

This initiative is indirectly affected by the fact that about 30 percent of the foreign assistance budget goes toward Foreign Military Financing (grants) for military hardware and \$10-11 billion of military hardware is sold each year under the Foreign Military Sales Program. As a result, a large portion of the United States' foreign assistance funds and developing countries' funds goes toward proliferation of arms in the developing world. As previously indicated, this is emerging as one of the greatest threats to future world peace.

Although it is not practical to totally eliminate arms sales, since our friends need to be able to defend themselves, in today's global environment much more emphasis needs to be given to non-lethal foreign assistance. We need to provide world leadership by scaling back the sale of military hardware at the same time we increase bilateral engineer assistance. Surprisingly, although military expenditure retards growth, many developing countries accelerate such spending even when they experience little if any increase in internal or external threat to their regimes.⁴⁷ A recent article in the UN Chronicle addresses this problem further:

Developing countries are not too poor to pay for human development and take care of economic growth. National budget priorities can be restructured and military expenditures reduced. Military spending in the third world has risen three times as fast as that in industrialized nations in the last 30 years and is now approaching \$200 billion a year. ⁴⁸

With 30 percent of our foreign assistance funds going toward military hardware, less than 0.2 percent of our gross national product goes toward development assistance. The amount spent on development is far short of the figure proposed in a 1990 United Nations declaration: "Developed countries should enhance the quantity and quality of their aid and implement the agreed international target of 0.7 percent of gross national product to official development assistance." ⁴⁹ The figure of 0.2 percent represents a very limited planned program for investing in world peace and stability.

The low aggregate amount and continual decline of development assistance creates the danger of eroding friendly nations' confidence in the United States, undermines the goals of the program, and offers an invitation to internal and external threats. Many long-standing, needy friends are receiving little or no bilateral engineer assistance because of funding cutbacks and/or a lack of emphasis on development assistance.

This brings us to the second major problem. There is no commitment to make bilateral engineer assistance a major part of our national security strategy, as evidenced by the fact that:

- o Less than 15 percent of foreign assistance dollars go toward bilateral engineer assistance.

- o No policy exists that specifically addresses bilateral engineer assistance as a major part of our strategy for promoting democratic institutions, market-driven economies, and stability in developing countries.

- o No program exists that makes bilateral engineer assistance a major part of our strategy for strengthening the United States economy and protecting our future environment.

- o No overall engineer assessment and master plan is developed in each country to guide the conduct of the bilateral engineer assistance effort and ensure that the types of goals cited earlier in this paper are achieved.

- o No national engineer partnership has been formed to work with the country teams to plan and execute a comprehensive bilateral engineer assistance program.

Part of the reason bilateral engineer assistance has not been approached in a more aggressive manner is the threat environment we have been operating under since World War II. Under the burden of the Cold War, nation assistance was focused on a small number of countries and the top priority was strengthening military forces.

At the same time this is a "Catch-22" situation. Many U.S. personnel at the lower levels of the Security Assistance Community wanted to provide more bilateral engineer assistance, but it was impossible to interact with the host nation and establish a coherent plan, since no dependable source of funds was available. An example of the difficulties and frustrations posed by funding problems is provided below:

Current funding levels, however, limit the scope and benefit of African Civic Action and create problems that undermine the goals of the program...The sudden availability of year-end funds or an unexpected opportunity to participate in an allied project may force the hurried adoption of projects that have not been fully evaluated to determine their appropriateness for host nation military or their sociological implications. If subsequent review or collapse of funding source cancels the project, expectations are dashed and the reliability of the U.S. African Civic Action program is questioned...Funding also precludes follow-on funding of maintenance costs for completed projects...Finally, funding is not available to conduct post-completion reviews of all African Civic Action projects to evaluate their relative contributions toward achieving African Civic Action goals. 50

Although engineer assistance efforts to-date have resulted in many successful construction projects throughout the world (e.g., roads, schools, medical buildings, and water supply facilities), because of the problems addressed above, in most cases actions taken are too small and/or disjointed to have a significant impact within the host country or the United States economy. Nevertheless, the diplomatic missions and U.S. unified commands are trying to do the best they can with the limited funds available. The U.S. Southern Command, for example,

recently launched a renewed effort to maximize the benefits of the engineer assistance that they do provide. This initiative includes augmenting projects completed using foreign assistance funds by taking advantage of a limited amount of dollars that are available to perform construction in conjunction with United States military training.

Larger scale engineer assistance has been provided in a small number of special cases with a great deal of success. The best example was the support provided to Saudi Arabia during the 1980s. In this case a \$17 billion dollar program was completed that substantially added to the quality of life and defense of the country. We developed several major facilities, trained Saudi engineers in management and construction techniques, and opened new markets for American firms. A major factor that should be kept in mind with this example is that Saudi Arabia paid for most of this engineer assistance. Unless another country does likewise, which would be an option under the proposed initiative, the level of assistance provided under the recommended program would be considerably less. Nevertheless, the Saudi Arabian initiative proved how effective and beneficial a comprehensive bilateral engineer assistance program can be.

Another more recent initiative is the Support for Eastern European Democracy Act of 1989. This program is designed to help Hungary and Poland transition to democracy and a market economy,

and will include efforts to help reduce severe environmental problems.⁵¹ Again, we are talking of a special program that only affects two nations of the world, and for which a unique funding strategy has been developed. This program is mentioned because it is somewhat representative of the initiative being proposed. It is ironic, however, that we do not have similar programs with our long-standing, needy friends in other critical parts of the world.

Currently there are neither the resources nor the will to make bilateral engineer assistance a major part of our national security strategy. The challenges and threats facing the world have greatly changed within the last few years. Whereas it may have been acceptable in past years for bilateral engineer assistance to take a back seat to other forms of aid, the time is now right to make it a major part of our national strategy. Recommendations on how we can develop a comprehensive bilateral engineer assistance program as one of our primary strategic tools will now be addressed.

RECOMMENDATIONS

In May 1990 Senator Boren said, "It is a new world; we have to stop and think about our role in it; we have to have a vision for it. It's been said that those who mill around at the crossroads of history do so at their own peril."⁵² We are at

the crossroads, and one of the best tools we have for making a difference is bilateral engineer assistance. How can we establish a viable bilateral engineer assistance program?

First, the Department of State and Security Assistance Community must wage a campaign to convince the National Security Council, Congress, and Interagency Community that this is a good idea. Getting support from Congress is particularly critical since it determines the dollar value and type of assistance provided to foreign countries. Attaining Congressional support may not be an easy task.

In his March 1990 National Security Strategy document the President indicates that a national security strategy that takes us beyond containment needs the tools afforded by foreign assistance more than ever. However, it goes on to point out that these tools have always struggled for survival in the Congressional budget process, and low funding, excessive earmarking, and conditionality have hampered the effectiveness of the program.⁵³ The State Department indicates that the conduct of foreign affairs is America's first line of defense in the nuclear age. It went on to say, however, that Congress is making such drastic cuts in the foreign affairs budget that it is severely threatening the foreign affairs program and our vital interests around the globe.⁵⁴ Similarly, LTG Brown of the Defense Security Assistance Agency recently said:

Over the years, as security assistance has declined, the levels of Congressional earmarking have increased. But the world has changed. It does not serve the best interests of U.S. foreign policy to lock all but tiny percentages of security assistance funds in earmarks... High levels of earmarking within a reduced overall appropriation have forced us to zero out numerous countries while drastically reducing others." 55

The net result of these Congressional difficulties has been a continual erosion of confidence by developing countries in the United States and a major reduction in our leadership in the area of development assistance. For example, the United States is now ranked sixth on the list of major aid donors to sub-Saharan Africa. We must find a way to overcome this negative trend and convince Congress to support this initiative. There are some indications that Congress may be receptive to making a major shift in foreign assistance policy. During an October 1990, Senate Committee on Appropriations hearing, members of the committee recognized that U.S. foreign assistance must be made more relevant to the diverse challenges of the 1990s and beyond. It was also stated that, "what is needed is a new national consensus about why, how, and for what purposes this country gives foreign aid." 56

Second, the Department of State, Security Assistance Community, and Interagency Community must vigorously explore creative strategies for funding this initiative. We must have a dependable source of funds so that long term plans can be developed and executed.

In view of United States budget problems, obtaining the necessary funds will not be easy. Just how difficult it might be can be seen in another statement by Senator Boren, "How do we persuade the American people to do more in terms of foreign aid when, according to the latest poll, public opposition to foreign aid is at its highest level? Eighty percent of the American people strongly oppose an increase in foreign assistance." 57 We can assume that this resistance will be reflected in the actions of the Congress. There is hope, however, because a more recent survey (following the Gulf War) indicated 62 percent of the American public and 97 percent of American leaders voted for an active American role in international affairs. 58

Innovative approaches to funding must be found that will allow us to substantially increase bilateral engineer assistance without greatly increasing net losses to the United States economy. Some possibilities are summarized below:

- o Revise the distribution of funds within the current foreign assistance funding level, to include reducing the focus on Israel and Egypt, and military hardware.

- o Maximize the use of host country and United States military engineer forces. They can perform many tasks at much lower costs than contractors and simultaneously obtain realistic training.

o Ensure that, when feasible, the host country funds all or part of the bilateral engineer assistance similar to the cost sharing arrangement with Saudi Arabia. Many developing countries have resources (tapped or untapped) to fund development efforts, but they do not have the management, construction, and technological base to execute a comprehensive development program. Part of this program in some countries may be to help them tap their own natural resources.

o Link the assistance to a "Buy American" plan. In other words, a specified proportion of the work completed or equipment provided must be from American firms.⁵⁹ We need to do better in this area. For example, according to AID, "almost 80 percent of the Japanese aid program goes directly to funding the importation of Japanese manufactured exports, compared to about 20 percent for the United States program."⁶⁰ We need to better use, but not abuse this concept.

o Establish a system of engineer assistance/equity swaps, where engineer assistance can be swapped for an equity holding or something else of value in the host country.

o Promote private investments by United States' firms that will both support the bilateral engineer assistance master plan and provide income to the investor.

o Establish an "Engineer Assistance Bank", into which individuals and corporations can make tax deductible donations in

support of this humanitarian effort--an investment in peace and stability.

- o Take advantage of the debt-for-nature swap concept being promoted by Konrad von Moltke of the World Wildlife Fund. Under this program environmentally oriented groups purchase a portion of a country's debt for less than its real value and hand it over to the debtor government. The debtor government uses the proceeds in some designated environmental project. 61

- o Encourage other countries to contribute funds to support the United States' program. We have recent evidence that this is a plausible option. In 1990 the United States put up \$1.6 million for a Regional Environmental Center in Budapest which attracted about \$13 million in contributions from other countries. 62

- o Assist the host nation to obtain funding from various relief and financial organizations (e.g., United Nations Development Programme, United Nations Industrial Development Organization, Organization for Economic Cooperation and Development, International Monetary Fund, and World Bank), which can be used to support bilateral engineer assistance projects. The fact that a large part of these efforts will be directed toward environmental problems and sustainable development will make this task somewhat easier. The U.N. Brundtland Commission Report states that the World Bank should make a fundamental

commitment to sustainable development, and that both the Bank and the International Monetary Fund should fully incorporate sustainability considerations. ⁶³ The World Bank answered this challenge by agreeing that more emphasis would be placed on helping to support human resource development, environmental protection, and self reliance. The President of the World Bank, Barber Conable, also stressed the need for greater "capacity-building," placing emphasis on strengthening a developing nation's own institutions to deal with its problems. ⁶⁴

o Emphasize use of a two pronged approach for completing large projects. The United States can provide management, design, technology, and training assistance to support the project. And the host nation can use the resultant plans/designs to more easily obtain multilateral funds to actually construct the project. Through this procedure more projects could be completed at less cost to the United States, because the above mentioned U.S. assistance can be provided at about one-tenth the cost of the actual construction. According to U.S. Aid to the Developing World, "technical assistance was the guiding premise behind U.S. development policies in the early postwar period--the era when many aid recipients "graduated" out of aid and into broad-based, self-sustaining economic growth." ⁶⁵

Third, although the Department of State/Ambassadors must lead this effort, a national engineer assistance partnership should be forged to plan and implement the proposed initiative. Inter-disciplinary regional groups should be formed to help the country teams develop and execute the bilateral engineer assistance portions of their country plans. As a minimum, the groups should include personnel from the Departments of Agriculture and Energy, Environmental Protection Agency, and U.S. Army Corps of Engineers.

A recent study indicates that the major obstacles to effective action in Third World assistance programs are inadequate coordination among executive agencies and the inability to achieve unity of command and effort among these various competing authorities. ⁶⁶ Recently a committee from the House of Representatives chided two government agencies for their inability to work together, "the committee expects that these two agencies will cease their unproductive "turf war" and cooperate in effectively implementing the assistance authorized by this title." ⁶⁷

To minimize coordination problems a written agreement should be developed under the leadership of the Department of State which outlines the roles and responsibilities of all participating agencies. In this document one agency should be designated as the primary engineer agent for the initiative. As will be discussed in the last portion of this paper, my

recommendation of the organization to fill this role is the U.S. Army Corps of Engineers. To further enhance coordination all forms of bilateral engineer assistance to a country, to include military civic action, must be addressed in a jointly developed master plan. We must form a strong national engineer assistance partnership that transcends parochial interests.

Lastly, several technical recommendations and considerations regarding the conduct of the proposed bilateral engineer assistance program will be addressed below:

- o Once a target country is selected, we should actively proffer the engineer assistance program to the host government. The emphasis is on "actively" because we should push this program both from the standpoint of helping the host country and the long term security, economy, and environmental quality of the United States. If a country says it wants to participate in the program, the first step should be a comprehensive assessment of engineer management, environmental, infrastructural, engineer technology, and military engineer problems and capabilities. This assessment should not be constrained by the projected dollars available to perform work under the program. The final product should be a data base that identifies the country's major engineer shortfalls. This data base would serve as a tool for prioritizing corrective actions both under this program and through normal host country engineering efforts.

o A software program should be developed to support and standardize the engineer assessment. The PANTHER Tier II Simulation Program being developed by the Army's National Simulation Center at Fort Leavenworth may provide a good start point for this effort, particularly since that model is being designed to support plan development and execution at diplomatic missions. The host country should participate fully in the assessment, which will serve as an excellent training tool for their management and engineer personnel. The assessment itself will be very valuable, and there may be some countries that just want to take advantage of that part of the program.

o Following the assessment, we should develop a prioritized, time phased plan that is realistic in scope and contingent on the availability of resources. This process must include a cost-benefit analysis, consideration of environmental factors, and public involvement. We must constantly keep in mind that the idea is not to try to build/rebuild an entire nation, but to complete pilot projects that will help to put a nation on the road toward sustainable development.

o The resultant master plan should be designed to systematically move the host country toward the goals previously outlined in this paper (to include expanding the United States' economy). This plan must be closely tailored to the specific country and region in question. Problems and solutions in

Industrialized Eastern Europe will be very different from those of Africa, and some countries may be receptive to only certain types of engineer related assistance. The Soviet Union, for example, has expressed an extreme interest in engineer management training, but is adamant they do not need technical assistance:

...Andrey Stroyev, general manager of Mosinzhstrol, is quick to point out that he and 45 Soviet managers are receiving only management--not technical--training. "In the technical fields we are not far away, and in some ways we may even be ahead of the U.S.," he says. "It's in organization and management that we're much weaker. On a scale of one to ten, the U.S. is a ten and the Soviet Union is a zero." 68

o A critical part of the program is to provide training (to include on-the-job training when possible for local personnel) and technology so that the host country can use its own resources to continue economic growth and sustainable development in the future. Training on how to respond to natural and man-made disasters should be an integral part of the program. Similarly, we should provide management training in areas such as project scheduling, construction methods, human resources management, asset management strategies, and automated systems.

o The involvement of host country and/or United States military engineers in the program should be encouraged, but it should not be a mandatory element of the program. In some countries political sensitivities will make it undesirable to include military engineers in the program; whereas, in others the military is the primary source of organized development and

stability. As stated by LTG Brown of the Defense Security Assistance Agency: "In many countries the military is the only effectively functioning modern institution with a disproportionate concentration of technical and engineering skills. They are a critical part of nation building." 69 When possible, host nation military engineers should be trained to perform civil works missions and disaster relief operations. In October 1990 the Senate Committee on Appropriations asked the Department of Defense to increase foreign military training that would provide nation building skills, to include the construction of public works. 70

o The program should include the use of United States' research facilities, when innovative solutions are needed for specific host country problems--keeping in mind that for any proposed solution to actually work must make sense both economically and environmentally. In some cases fairly simple research projects can have a significant effect on the environment and economy of a developing country. A German technical assistance agency, for example, developed a new stove made out of local materials that shortened cooking times and used much less wood. 71

o Personnel working on this program should receive training on public involvement in the resolution of infrastructure and environmental problems, and related disputes.

As stated by Marie-Angelique Savane, a Senegalese development expert and recently appointed advisor to the U.N. High Commissioner for Refugees:

A major problem with prior assistance efforts is that objectives and choices that have been given priority in development have never really taken account of the deep rooted desires of the people. For a long time, donors and governments have treated the peoples of the Third World countries as if they are devoid of ideas, have no history, no culture and no answers to their problems. But experience shows that peasants see things very clearly indeed. They know what their problems are and they often know how to resolve them. ⁷²

An article in the UN Chronicle came to a similar conclusion:

"when people are placed at the center of development programs, high levels of human well-being can be achieved even at modest income levels." ⁷³ We must respect the host countries' views as to what constitutes development.

o When issues are being examined, they must address the underlying political and social reasons for the target problem. The proposed "solution" must actually improve the situation, not lead to the development of new problems. Problems must be looked at from both a country and regional perspective. Research designed to get a historical perspective of environmental problems has shown that, in many cases, unwanted and unexpected side effects of what at first appeared to be solutions to environmental difficulties became overwhelming problems. ⁷⁴

Environment cites an example where it was recommended that funds

be withdrawn from a major plan to combat deforestation because of these types of planning errors:

TFAP's [Tropical Forestry Action Plan] plan for Peru, for instance, cites the encroachment of the nation's landless poor into the forest as a major cause of deforestation, but offers no institutional correctives. Instead, the Peruvian plan details expansion of the road network and production increase, although it agrees that these measures will speed deforestation. 75

o A special challenge in the nonindustrial areas of the world is to help them expand their infrastructure, while avoiding the environmental mistakes made by those that have already gone through the industrial revolution. We need to share engineer technology to avoid the mistakes of the past and speed up the sustainable development process. A balance must be struck between environmental, social, and economic objectives. As stated by Senator Nelson:

The whole world would be better off if the developing nations avoided the mistakes of the industrial world and succeeded in creating an environmentally sustainable economy without first going through a long period of substantially exploiting and degrading the environment. 76

o Where feasible the program should include recycling management and technology. In dealing with environmental problems we should try to tap the benefit of our satellite reconnaissance systems. All projects must include training on the operation and maintenance of the resulting facility.

o Designs completed must take into consideration local customs, materials, and standards; be robust and simple to minimize maintenance costs through the life of the project; and provide for sustainable development. As stated by Alan Woods, Administrator of AID, "a long-term perspective is essential to determine whether apparent development is sustainable or whether in fact some of today's growth undermines tomorrow's prosperity." 77

o In our zeal to assist the nations in Eastern Europe, we must not forget our other long-standing friends in the world that also need assistance. For example, according to a recent study, sub-Saharan Africa is the only region where poverty is not likely to decline by the year 2000. 78 An ounce of prevention in nations that are just beginning to develop an industrial base is worth many pounds of cure in the future. We must take care to manage a program that is equitably applied throughout the world. We should generate this program in as many countries as we can based on the results of our creative funding strategies.

o In dealing with other nations we must remember that the world sees the United States as one of the worst polluters of the environment. This is true in spite of our herculean environmental efforts as of late, largely because of the sheer size of our industrial complex and style of living. For example, it is estimated that the United States contributes 25 percent of

the carbon dioxide to the air each year, even though we have only 6 percent of the world population. If we are to provide international leadership, we must continue to aggressively work on our own environmental problems. We must lead by example.

o Actions should also be taken to ensure our efforts complement nation assistance programs being developed by other countries and international organizations such as the United Nations Environmental Programme, Food and Agricultural Organization, World Resource Institute, and World Bank. As stated in a June 1989 Department of State paper on U.S. Policy and the International Environment, "cooperation is the key to saving the "boat" [referring to the world] on which we all live, eat, breathe, and interact with each other and with nature." 79

o The "information revolution" helped us win the Cold War; word on the benefits of democracy got deep within many previously closed societies. In today's world it is very difficult for even the most oppressive leader to stop the flow of information. We should ensure that the word gets out that engineer assistance is one of the potential benefits of democracy.

This completes the outline of the recommended program of bilateral engineer assistance. The road will be neither short nor easy, but the potential rewards are enormous. During the development and execution of this program, we should seek out and

take advantage of the many lessons learned during our long history of providing foreign assistance. ⁸⁰ Having examined the reasons for revising our national security strategy, imperatives for making a substantial increase in bilateral engineer assistance, and recommendations for making those increases, we will now examine why the U.S. Army Corps of Engineers should be given a major role in the development and execution of this initiative.

THE CORPS OF ENGINEERS SHOULD BE THE PRIMARY ENGINEER AGENT

To effectively implement the envisioned bilateral engineer assistance program one United States agency has to be designated as the primary engineer agent. Having one organization designated as the primary engineer agent would provide continuity for the program throughout the world, minimize confusion in the host nation, maximize the effectiveness of the program, and facilitate economies of scale. The primary engineer agent would be part of the national engineer assistance partnership operating under the direction of the Department of State. This organization would participate in planning and be primarily responsible for the overall engineer assessment, alternative analysis, project design, preparation of contracts, construction, and coordination of other engineer support for the initiative. The importance of having a primary engineer agency can be seen in the following problem surfaced by a Senate committee:

The Committee is concerned about the overlapping assistance programs and the several participating agencies involved...The Committee has heard numerous complaints...that the administration does not have a clear organization, with well understood procedures and processes...The plan should address the need for a lead agency in each of the principle areas of the United States effort so there is clear responsibility for coordination and planning. 81

After looking at the organization, missions, and experience of the various departments and agencies in the United States, it is my assessment that the U.S. Army Corps of Engineers is best qualified to fill this critical role. Part of the reason the Corps of Engineers should be the primary engineer agent lies in the critical role it has played during our own Nation's development. As stated by General Vuono in a recent article:

Throughout our long and proud national history the U.S. Army Corps of Engineers has played a unique and vital role--in both peace and war--in building and protecting this nation. From the construction of the nation's capital to the opening of the west, the Corps of Engineers has helped to forge the very foundation upon which this nation rests. Throughout the land, countless bridges, waterways, monuments, and railroads serve as silent reminders of the timeless contributions of the Corps to the American people. 82

Furthermore, the Corps has historically provided engineer support for national emergencies and served as the training ground for the evolving governmental and private engineers. It is my premise that developing nations will be well served to see how the Corps works and to use it as a model to develop a similar national engineer agency.

The Corps is also uniquely qualified for this role because of the dual nature of the organization. It is comprised of both military and civilian personnel. It can rely on its civilian personnel when it is appropriate to do so because of political sensitivities or the nature of the mission. And it can deal military-to-military when necessary to build an internal military engineer force that can both support the host nation's Army and perform civil works. The Corps' structure also allows it to easily orchestrate the involvement of U.S. military engineers (Army, Navy, and Air Force) in the program. Establishing cooperative working partnerships is a day-to-day requirement for the Corps.

One major advantage is that the Corps already has representation throughout the world and is used to operating in the international environment. Each year the Corps receives high praise from its national and international customers. The Corps has already proven that it is able to bring its management, contracting, and other talents to bear anywhere in the world on short notice. The engineer related nation assistance previously described in Saudi Arabia was managed by the Corps, as were many of the smaller engineer assistance projects that have been completed. The Corps is already working with the Department of State and Environmental Protection Agency to complete a pilot project in Poland as part of the Support for Eastern European

Democracy program. It is also playing a primary role in the rebuilding of Kuwait.

Two of the worst problems facing developing nations are water resources (quality and quantity) and hazardous waste. The Corps has had ample experience in both of these areas. Management and safeguarding of water resources and wetlands has been a major functional area of the Corps for many years. During the past several years the Corps has been heavily involved in the resolution of hazardous waste problems, both within the Department of Defense and in partnership with the Environmental Protection Agency. The Corps also manages the U.S. Army Toxic and Hazardous Materials Agency.

Even in areas where the Corps is not the technical expert it can respond by using its contracting expertise to make things happen in a timely and effective manner. The Corps actively works with about 1500 United States design and construction firms on a regular basis.⁸³ Contracting skills will be critical because one of the primary goals of the bilateral engineer assistance program is to increase the world market for U.S. goods, services, and engineer technology.

The Corps' high level of emergency preparedness and expertise in dealing with natural and man-made disasters are also major factors in determining the U.S. construction agent. Almost every week a natural disaster occurs somewhere, and in many cases

the nation involved is not prepared to deal with the problem. This leads to a greater loss of life and a prolonged recovery. What may be even more important is the high potential for man-made ecological disasters such as the Chernobyl nuclear accident. The cloud of toxic gas released from the reactor explosion contaminated land occupied by 2 million Byelorussians and caused extensive deaths, injuries, and clean-up requirements. In view of its close proximity to the border with China and Mongolia, this could have become an international incident. Passing on lessons learned in disaster relief should be an integral part of the bilateral engineer assistance program.

Research and development will play a vital role in the search for new concepts that will provide "acceptable" solutions to environmental problems. The most acceptable solutions will be those that protect the environment while not costing additional money. The Corps is capable of taking an active part in this activity because of its dedicated laboratories: U.S. Army Engineer Topographic Laboratory, U.S. Army Cold Regions Research and Engineering Laboratory, U.S. Army Engineer Waterway Experimentation Station, and U.S. Army Construction Engineering Research Laboratory. The Corps also can readily interact with other national laboratories.

Based on speeches and letters written by the Chief of the Corps of Engineers, LTG Henry J. Hatch, it is obvious that the leadership of the Corps supports the expansion of bilateral

engineer assistance at this critical juncture in world history. ⁸⁴ Moreover, during the past several months the Corps has been working very closely with U.S. Southern Command in a renewed effort to maximize the benefit of engineer assistance provided to Latin America within the very limited dollar resources being allocated. At the same time the Corps has been working very closely with the Department of State and Environmental Protection Agency to do everything it can to support the initiative to promote democracy and economic pluralism in Poland and Hungary.

The Corps may have to increase engineers and inspectors to meet expanding requirements, but no additional headquarters, design, or research facilities would be required. Just how many additional personnel will be required cannot be estimated until the scope of the effort is decided.

Heretofore the Corps of Engineers has not been a full partner in foreign assistance efforts, and it has not been effectively used as the national engineer asset that it is. As a result other agencies have exerted a tremendous amount of energy and funds trying to develop their own engineer capabilities, rather than concentrating on their area of expertise and getting the Corps to provide engineer assistance. This phenomena has reduced the effectiveness of many programs, and at the same time, it has increased the cost to the host nation and American public.

A recent Senate committee hearing highlighted some of the resultant problems when it chided AID for, "a persistent pattern of systemic problems of management, accountability, and program evaluation." ⁸⁵ Similarly, the U.S. General Accounting Office conducted two studies and found that the following types of problems existed: inadequate contract evaluation and competitive procedures, complex and cumbersome project preparation procedures, and poor project management. ⁸⁶ As indicated above, the Corps of Engineers has earned very high marks in both contracting and project management.

This is not to say that AID should not have any engineers on their staff, because they certainly need engineer personnel to formulate policies, plans, and standards, review proposed projects, provide engineer advise to AID administrators, provide liaison to engineer agencies, etc. Nor does this mean that other agencies such as the Environmental Protection Agency do not have a critical role to play, for their expertise is essential if an effective national engineer partnership is to be forged. What it does mean is that the U.S. Army Corps of Engineers is uniquely qualified to provide the engineer management skills needed to orchestrate the technical aspects of this initiative.

CONCLUSION

We are on the verge of a new world order. At the same time we are coming to grips with the fact that global stewardship of

our environment, growing economic problems, and increasing military capabilities of the developing world will be dominant issues in the years ahead. In a speech on 23 April 1990, Secretary General of the United Nations, Javier Perez de Cuellar said "the time has come to be bold [to reduce military expenditures during the 1990s and integrate environmental concerns into national policies]...success requires that we be more forward and outward looking than our cautious human and political nature normally allows." 87

America should indeed be "bold", and take the lead in helping to construct the new world order by substantially expanding bilateral engineer assistance. This initiative will require strong leadership and commitment, and a substantial amount of work from many segments of the United States government, but the actions required are well within our capabilities.

Assisting to build sound economic and political infrastructures throughout the world, and narrowing the gap between the developed and developing nations are investments in the future. Furthermore, this initiative promises to strengthen the United States' economy and security, and help safeguard its environmental condition. In regards to the latter point, as stated by Mostafa Tolba, head of the U.N. Environment Program,

"the longer we delay, the worse the disaster will be for our children, and for our children's children." 88

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